

**A RESOLUTION**

**02- 1847**

**BY CITY UTILITIES COMMITTEE**

A RESOLUTION AUTHORIZING THE MAYOR TO ISSUE A NOTICE TO PROCEED WITH CH2M HILL, INC./TOC, INC., - JV FOR FC-6710-96A, ANNUAL CONTRACT FOR ARCHITECTURAL AND ENGINEERING SERVICES TO PROVIDE DESIGN SERVICES, CONTRACT ADMINISTRATION SERVICES, CONSTRUCTION PHASE SERVICES AND POST CONSTRUCTION PHASE SERVICES FOR SOUTH RIVER AND INTRENCHMENT CREEK WRCS' IMPROVEMENTS ON BEHALF OF THE DEPARTMENT OF PUBLIC WORKS IN AN AMOUNT NOT TO EXCEED EIGHT HUNDRED SIXTY-THREE THOUSAND EIGHT HUNDRED DOLLARS (\$863,800.00); ALL CONTRACTED WORK SHALL BE CHARGED TO AND PAID FROM FUND ACCOUNT AND CENTER NUMBERS: 2J27 573001 M55118099999 (\$578,746.00) AND 2J27 573001 M56121059999 (\$285,054.00).

**WHEREAS**, the City of Atlanta did enter into FC-6710-96A, Annual Contract for Architectural and Engineering Services; and

**WHEREAS**, the Department of Public Works does require Design, Contract Administration and Construction Services for the South River and Intrenchment Creek WRCS' Improvements in an amount not to exceed Eight Hundred Sixty-three Thousand Eight Hundred Dollars (\$863,800.00); and

**WHEREAS**, the Commissioner of the Department of Public Works and the Purchasing Agent of the Bureau of Purchasing and Real Estate have recommended that CH2M HILL, INC./TOC, INC. - JV, to provide Design Contract Administration and Construction Services in an amount not to exceed Eight Hundred Sixty-three Thousand Eight Hundred Dollars (\$863,800.00); and

**NOW THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF ATLANTA, GEORGIA**, that the Mayor be and is hereby authorized to approve a Notice to Proceed with CH2M HILL, INC./TOC, INC. - JV, for FC-6710-96A, Annual Contract for Architectural and Engineering Services in an amount not to exceed Eight Hundred Sixty-three Thousand Eight Hundred Dollars (\$863,800.00); and

**BE IT FURTHER RESOLVED**, that the Purchasing Agent of the Bureau of Purchasing and Real Estate be and is hereby directed to prepare an appropriate contractual agreement for execution by the Mayor, to be approved by the City Attorney as to form. ..

**BE IT FURTHER RESOLVED**, that this Notice to Proceed should not become binding on the City, and the City shall incur no liability upon same until such contract has been executed by the Mayor and delivered to the contracting party.

**BE IT FINALLY RESOLVED**, that all services for said Work Authorization shall be charged to and paid from fund account and center number: 2J27 573001 M55118099999 (\$578,746.00) and 2J27 573001 M56121059999 (\$285,054.00).

KOB (9/30/02)



SHIRLEY FRANKLIN  
MAYOR

CITY OF ATLANTA  
TECHNICAL SERVICES  
2440 BOLTON ROAD, N.W.  
ATLANTA, GEORGIA 30318  
404 - 350-4950  
FAX: 404 - 350-4951

DEPARTMENT OF PUBLIC WORKS  
JOHN GRIFFIN, JR.  
INTERIM COMMISSIONER

DAVID PETERS, P.E.,  
ACTING DEPUTY COMMISSIONER

GARNEY INGRAM-REID  
DEPUTY COMMISSIONER

**MEMORANDUM**

**DATE:** September 26, 2002

**TO:** Felicia Strong-Whitaker, Director  
Bureau of Purchasing and Real Estate

**FROM:** Bob King, Director of Wastewater Services  
Department of Public Works

**REF:** Improvements to South River and Intr trenchment Creek WRCs

Enclosed is a proposal from CH2M Hill for providing design services, contractor prequalification, bid phase services, construction phase services and post construction phase services for improvements at the South River and Intr trenchment Creek WRCs. The improvements and reasons they are required are given below:

1. **Rehabilitation of six secondary clarifiers at South River.** The clarifiers have been in operation since about 1980. The clarifiers need to be taken out of service and repairs made to bring the clarifiers back to optimum operating condition in order to meet the new Metro effluent limits for the 2004 NPDES permit.
2. **Install a scum system on the secondary clarifiers at South River.** The scum system on the secondary clarifiers is not operational. The scum system is needed to remove scum floating on top of secondary clarifiers. In an inspection recently conducted at South River by the Environmental Protection Division in April 2002, the inspector noted excessive scum on the secondary clarifiers and that the scum rakes were inoperable (see attached letter dated April 15, 2002).
3. **Upgrade South River's natural gas supply.** Upgrades are needed due to safety and maintaining regulatory compliance with air permits. Currently, the odor control buildings have no building heat. This could cause fans in the odor control building to go

down in freezing weather and result in loss of ventilation to the headworks. This would create an explosion hazard.

4. **Upgrade South River's Chemical Feed Building.** Upgrades are needed due to safety and regulatory compliance with new Metro effluent limits for the 2004 NPDES permit. This work includes removing old pumps, piping, three bulk storage tanks and electrical controls that are not functional and installing an additional ferric chloride feed pump, piping and controls. Ferric chloride is used for removing phosphorous from wastewater.
5. **Upgrade Intr trenchment Creek WRC's grit removal system at the headworks.** Some of the grit removal system components need to be replaced due to wear from conveying the grit. The diameter of the grit conveyor and the direction of the conveyor operation will be evaluated during the design to determine if changes will improve performance. Worn gearboxes, bearings, conveyor cable and housing will be replaced. Grit removal is needed to protect down stream processes from damage due to grit.
6. **Repair of the Intr trenchment Creek force main.** The force main repair is needed to replace a temporary repair and prevent the possibility of a sewage spill from occurring from the temporary repair. The temporary repair is almost five years old.
7. **Install a bypass from the Intr trenchment Creek effluent pump station to the Intr trenchment Creek Tunnel.** A bypass is needed to allow the Intr trenchment Creek effluent to be diverted into the Intr trenchment Creek Tunnel while the Intr trenchment Creek force main is being repaired in Item #6. In addition, this option would guard against sewage spills if more than one effluent pump at Intr trenchment Creek is out of service.

The total estimated cost for completion of this project is approximately \$5,500,000. Funding for this project will come from the 2002 Bond sale. CH2M Hill's portion of this project is estimated to be \$863,800. The remainder of the estimated cost, required for construction, will be bid at a later date.

Since work will be completed at both South River WRC and Intr trenchment Creek WRC, funding for CH2M Hill's services should be divided between accounts for South River (2J27 773001 M55118099999) for \$578,746 and Intr trenchment Creek (2J27 773001 M56121059999) for \$285,054. I would appreciate your help if you could expedite this contract.

Cc: John Griffin  
Keith Brooks  
Hubert Owens  
Bea Shell  
Sylvester Richards  
David Peters, P.E.  
John Reinhard, P.E.  
Tony Richardson  
Alan Stillwell  
Aaron Cook  
Terry Randall  
David Winters, P.E.

Environmental Protection Division, Water Protection Branch  
4220 International Parkway, Suite 101, Atlanta, Georgia 30354  
Permitting, Compliance and Enforcement Program  
404/362-2680  
FAX: 404/362-2891

April 15, 2002

Mr. David Peters, P.E.  
Deputy Commissioner of Public Works  
City of Atlanta  
55 Trinity Avenue SW, Atlanta City Hall  
Atlanta, GA 30335

RE: Atlanta South River and R. M. Clayton  
Water Reclamation Centers (WRCs)  
Permit Nos. GA0024040 & GA0021482

Dear Mr. Peters:

Representatives of the Environmental Protection Division (EPD) conducted a Reconnaissance Inspection at the referenced facilities on April 3 and 4, 2002. Copies of the inspection report are enclosed.

Based on our inspection, we found the South River WRC has problems, including the following:

- High sludge blankets in the secondary clarifiers.
- Excessive scum and debris in the secondary clarifiers.
- Scum rakes inoperable in the secondary clarifiers.

The City is expected to take corrective actions before a violation occurs. Please submit a report to this office, within 30 days of the receipt of this letter, explaining what is being done to insure secondary clarifiers are operating in optimal condition. If you have any question concerning this inspection, please contact Emily Wingo at (404) 362-2680.

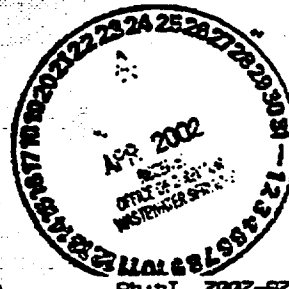
Sincerely,

*M. Shahbaz*

Marzieh Shahbaz, Manager  
West Compliance and Enforcement Unit  
Permitting, Compliance and Enforcement Program

MSH/elw

Attachments





SHIRLEY CLARKE FRANKLIN  
MAYOR

CITY OF ATLANTA  
TECHNICAL SERVICES  
2440 BOLTON ROAD, N.W.  
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JOHN W. GRIFFIN, JR.  
DEPUTY COMMISSIONER

GARNEY INGRAM-REID  
DEPUTY COMMISSIONER

DATE: September 4, 2002  
TO: Mr. Bob King  
FROM: David Winters, P.E. *DW*  
REF: Improvements to South River and Intrenchment Creek WRCs

Enclosed is a proposal from CH2M Hill and a draft transmittal letter to Purchasing from David Peters. The transmittal letter needs to be signed by Mr. Peters. The proposal from CH2M Hill is for providing design services, contractor prequalification, bid phase services, construction phase services and post construction phase services for the following improvements to South River and Intrenchment Creek:

1. Rehabilitation of six secondary clarifiers at South River.
2. Install a scum system on the secondary clarifiers at South River.
3. Upgrade South River's natural gas supply.
4. Upgrade South River's Chemical Feed Building.
5. Upgrade Intrenchment Creek WRC's grit removal system at the headworks.
6. Repair of the Intrenchment Creek force main.
7. Install a bypass from the Intrenchment Creek effluent pump station to the Intrenchment Creek Tunnel.

Your assistance is needed to get the requisition prepared and the letter signed. The package can then be sent to Keith Brooks for an FC # and preparation of the front ends. Once we have the FC #, I need to apply to Contract Compliance for the goals. If I can be of further assistance, please call me.

cc. Sylvester Richards  
Tony Richardson  
Alan Stillwell  
Marcia Hurd-Wade  
Larry Harrod  
Russ McKern  
John Reinhard, P.E.  
Bea Shell



**CH2MHILL**

**TOC, INC.**

**a joint venture**

**115 Perimeter Center Place, NE, Suite 700  
Atlanta, Georgia 30346-1278  
770-604-9095  
fax 770-604-9183**

**133 Carnegie Way, Suite 600  
Atlanta, Georgia 30303  
770-525-1370  
fax 770-525-1376**

September 24, 2002

David Winters  
City of Atlanta Department of Public Works  
Wastewater Services Division  
2440 Bolton Road, NW  
Atlanta, Georgia 30318

Subject: Proposal to Provide Professional Engineering Services for  
East Area 2003 Upgrades

Dear Mr. Winters:

CH2M HILL is pleased to provide this proposal to provide professional engineering services in conjunction with design and construction of miscellaneous upgrades at the Intranchment Creek and South River WRCs. These upgrades are:

- Rehabilitation or replacement of six secondary clarifier mechanisms at the South River WRC.
- Demolition of the existing secondary scum system and installation of new pumps, piping, valves, spray systems, electrical equipment, and controls at South River WRC.
- Review of the City-designed upgrade of the South River WRC Chemical Building. The scope of work for this item is limited to review of the existing drawings and specifications prepared by the City and submittal of recommendations for changes. Changes to the existing drawings and specifications will be by the City and the final sealed documents will be incorporated into the Contract Documents.
- Upgrade of the natural gas system at South River. On the Jonesboro Road side of the plant, activities will include installation of new gas meter at the service entrance, the evaluation of the existing gas feed piping to all buildings as well as connection and testing of the gas supply to the Primary Odor Control Building. On the South River Industrial Boulevard side of the facility activities to be done include evaluating the gas supply to the Dewatering Odor Control Building and making it operational.
- Upgrade of the grit removal system at the Intranchment Creek WRC aerated grit chambers
- Installation of a new passive overflow between the effluent pump station and Intranchment Creek tunnel. This will likely require the cutting and plugging of an existing 48" reinforced concrete pipe that has been abandoned.
- Review of the City-designed Intranchment Creek force main repair. The scope of work for this item is limited to review of the existing drawings and specifications prepared by the City and submittal of recommendations for changes. Changes to the existing drawings and specifications will be by the City and the final sealed documents will be incorporated into the Contract Documents.

Major tasks comprising the work scope are described below.

### ***Phase 1 Preliminary and Final Design Services***

#### **Task 1 – Program and Project Management**

Prepare a work plan with instructions for project execution including: deliverable descriptions; staff assignments and responsibilities; project schedule with intermediate and final milestone descriptions and dates; assigned man-hour and dollar budgets, QA/QC procedures (calculation checking, review assignments and budgets, design/constructability operability check lists); and, design and construction cost control procedures.

During design and construction phases, direct the activities of the project team and resolve technical, schedule, staffing, and cost issues. Maintain close contact with the City project manager and provide regular updates of the status of any issues that may affect the work.

Prepare and submit separate monthly invoices and abbreviated status report for this work. The monthly invoice will be in a format to be approved by the City's project manager and include standard backup of direct expenses (defined as CH2M HILL's Billing Transaction Register and copies of subconsultant invoices, if any).

#### **Task 2 – Preliminary Design**

During preliminary design, CH2M HILL will review previous work by the City for the upgrade of the South River WRC Chemical Building and repairs to an existing force main at the Intrenchment Creek WRC. CH2M HILL will provide comments for consideration by the City. This review will include an assessment to determine whether any upgrades to the facility are required to meet current NFPA or building code requirements. Any changes to the Chemical Building documents will be by the City and the City shall furnish final sealed documents for inclusion by CH2M HILL into the Contract Documents.

For rehabilitation of the South River WRC clarifiers, CH2M HILL will provide a structural engineer to inspect a single unit selected by the City as representative of overall condition of the six clarifiers. The inspection will be documented with photographs and in writing and submitted to the City along with recommendations for repairs or full replacement. Included in this task is an allowance of \$7,500 to obtain technical assistance from the original supplier of the mechanisms and to obtain their recommendations concerning the feasibility and magnitude of required repairs and costs. CH2M HILL will also make recommendations for high capacity scum removal (multiple full radius skimmers and appropriate anti-rotation baffling and sprays and removal equipment) and other possible improvements in the existing mechanisms (or features to be included in new mechanisms depending upon the outcome of the inspection) which might include energy dissipating feed wells, additional baffling, revised sludge collection, spray systems, and other features.

As part of the preliminary design, recommendations and costs for 1) secondary clarifier rehabilitation and improvements, 2) secondary scum pumping rehabilitation and improvements 3) gas system upgrade modifications and 4) upgrades to the grit removal system will be developed. In addition, the requirements for code-mandated upgrades to the existing Chemical Building as a result of the proposed chemical system upgrades will be summarized. A brief Technical Memorandum will be prepared for each of these areas for review by the City. These documents, following review and approval, will be the basis for developing the technical scopes of work for the final design drawings and specifications.

### **Task 3 – Final Design**

CH2M HILL will prepare engineering drawings and technical and legal specifications, as customarily made available, for bidding and construction of the project. Drawings will be prepared in AutoCAD using CH2M Hill's standard file naming, layering, font, legend, etc. standards. Review and final sets will be 11" x 17.

The General Conditions, Bonds, Contract and Insurance Requirements will be based on City of Atlanta standard documents. Other Division 0 specifications including the Invitation to Bid, Instructions to Bidders, Proposal Form, and Supplementary Conditions will be based on CH2M HILL's standard documents. Division 1 through Division 16 technical specifications will also be developed from CH2M HILL's standard masters and utilizing previous City of Atlanta projects (South River WRC and East Area CSO Improvements) as guide documents as appropriate.

### **Task 4 – Design Review Workshops**

A meeting with City staff will be held to kick-off the project. Workshops will be held with City staff to review the design at approximately the 30% and 85% completion points of the design. As part of the 30% review workshop the draft technical memoranda (secondary clarifier rehabilitation, new secondary scum system, upgrade of the natural gas system and upgrades to the grit removal system) will be reviewed and City comments will be received.

These are in addition to periodic contacts as the work proceeds. Workshops will be held in CH2M HILL's offices unless otherwise mutually agreed. Workshop documents will be submitted to the City a minimum of one week in advance. A written summary documenting all decisions reached will be submitted to the City within one week following the workshop.

### **Task 5 – Quality Assurance Reviews**

CH2M HILL will perform appropriate quality control reviews as the work progresses. Issues addressed in the reviews will include: compliance with project criteria and applicable codes; agreement/consistency with other related drawings and specifications; agreement with supporting calculations; adequacy of equipment and materials being specified; adequacy of operability, maintainability, and usability of the facilities; and implications with respect to constructability and the cost budget.

As part of the scope of this project, the City has specifically requested that quality assurance reviews be performed for two City-designed projects; work to upgrade the chemical building and work to repair a section of the Intrenchment Creek force main.

### **Task 6 – Construction Cost Opinions**

CH2M HILL will prepare a budget level estimate of construction cost at the completion of preliminary design. This estimate will be updated at the completion of the design.

### **Task 7 – Permits**

The City will apply for the building, construction, and land disturbance permits required for the work. CH2M HILL will furnish available information to support the City's applications. Three signed and sealed sets of the Contract Documents (including 11" x 17" drawings) will be furnished to the City in support of these applications.



### ***Phase 2 - Prequalification of Bidders***

CH2M HILL will assist the City in developing a list of potential bidders and in pre-qualifying bidders. The list will be based upon the scope and schedule of the construction, surveys of the local construction community, statements of qualification and supporting documentation provided by potential bidders, and general investigation of the past performance of potential bidders. CH2M HILL will provide the results of its investigation and its recommendations along with the proposed list of potential or pre-qualified bidders. The City will make the final decision on the list of pre-qualified bidders.

### ***Phase 3 - Bid Phase Services***

CH2M HILL will prepare an advertisement for bids, issue documents, respond to bidder and supplier inquiries, provide and issue written clarifications and addenda as required, Attend the pre-bid meeting and site visit, bid opening, evaluate the bids received, and issue to the City a written recommendation of award.

### ***Phase 4 - Construction Phase Services***

CH2M HILL will participate in City of Atlanta partnering activities with the selected General Contractor. CH2M HILL will also participate in Dispute Resolution Board activities with the City. CH2M HILL will provide periodic visits by qualified construction inspectors to observe the work of the Contractor and coordinating testing services. Should CH2M HILL determine that any work is not in accordance with the construction Contract, this will be brought to the attention of the Contractor and City.

CH2M HILL will procure a Sony DCRTRV-27 video camera and accessories including memory sticks (3), tapes (5 packs), memory stick reader (3), spare battery (2), service plan (1 year) and carrying case (1) for use of the inspection staff during construction. At the conclusion of the construction phase of the project, purchased equipment will be turned over to the City.

CH2M HILL will purchase a Kyocera 2530 Digital Photocopier for use at the project site. Unit capacity shall be 25 copies per minute and unit shall include automatic internal finisher/stapler. Two years of maintenance support will be provided.

CH2M HILL will provide Expedition document management support to the City during the construction phase of the project. Support activities shall include initial input of project baseline information on City of Atlanta computers in the construction trailer, preparation of a setup manual summarizing the Expedition features that will be used on the project, provision of basic instruction on the information to be input for each of these features and periodic support to City and CH2M HILL project staff working on site. A total of 60 days of support will be provided.

CH2M HILL will receive, review, and process required administrative, material, and equipment submittals to determine conformance with the intent of the Contract Documents.

CH2M HILL will review the Contractor's initial schedule of values as well as monthly draft and final progress payment requests. Recommendations will be furnished to the City for payment.

The Contractor's initial schedule for the project will be reviewed for conformance with the Contract and reasonableness and deficiencies communicated to the Contractor and City. Following revisions, the monthly updates will be reviewed and potential problem areas discussed with the Contractor and City.

CH2M HILL will respond to questions regarding the Contract and provide written interpretations in a timely fashion.

CH2M HILL will respond to claims or potential claims to determine their validity and take appropriate action. If a claim is determined to be without merit, communicate that and the reasons to the claimant and City. If a claim is determined to be meritorious, prepare the necessary documentation to resolve it. This task will include preparation of requests for quotations for potential changes that appear to be necessary and independently estimate costs. Assistance will be provided to the City to determine the necessity of the change and relative importance. Additionally, changes approved by the City will be incorporated into the contract documents.

The City, by construction allowance, shall pay the costs for services of testing firms to perform welding, soils and materials tests to verify that workmanship and furnished materials are in compliance with the Contract Documents. CH2M HILL will provide experienced staff to advise and assist the City and Contractor to resolve indicated construction quality problems.

CH2M HILL, in conjunction with City staff, will perform a final inspection of the new facility and develop a final punch list. A follow-up inspection will be performed to verify that the work is satisfactorily completed.

CH2M HILL will perform closeout functions obtaining the Contractor's releases of liens and waivers, sales tax affidavits and the final payment request. If the Contractor has generally met the intent of the contract documents a recommendation of final payment will be prepared and submitted to the City.

### ***Phase 5 - Post Construction Services***

#### **Task 1 -O&M Manual Update and Training**

CH2M HILL will update the existing electronic operations and maintenance manual to describe the new facilities added as part of this project. This manual will explain the various primary modes of operation that may be used, including both normal operation and initial emergency operation procedures. The manual will explain the purpose and basic concept of the various processes that are incorporated into the overall plant. Where appropriate, reference will be made to the manufacturer's detailed O&M submittals. It will include instructions for process operations and test or laboratory procedures that may be required to monitor the performance of the facilities. The manual will be suitable for use as an operational tool and to facilitate operator training.

CH2M HILL will conduct one training session at both South River and Intrenchment Creek to instruct City staff on the use of the updated sections of the manual.

CH2M HILL will provide support to the City's Maximo maintenance system by forwarding appropriate maintenance manuals to City staff as directed by the City and by insuring the accurate completion of Maximo data input sheets.

#### **Task 2 - Training & Startup**

CH2M HILL will provide the City fifteen days of overall system training just prior to startup and provide written standard operating procedures (SOPs) to guide City staff. CH2M HILL will assist the Contractor and City to startup the new facilities.

### **Task 3 – Warranty Assistance**

CH2M HILL will administer the City's equipment malfunction reporting process with the Contractor. CH2M HILL will also conduct a warranty inspection within one year of final completion and prepare a report summarizing the findings of the inspection.

### **Task 4 – Record Drawings**

CH2M HILL will prepare and submit record drawings to the City, based on information compiled and submitted by the Contractor. CH2M HILL will furnish both electronic and hard copy versions of the record drawings.

## **Assumptions**

The following assumptions were made in developing the scope of work and associated cost of services.

### **Design Phase**

1. The design work on this project will be completed during the third and fourth quarters of 2002.
2. The design will be based on the federal, state, and local codes and standards in effect at the start of the project.
3. The design documents will be prepared for a single construction contract.
4. Attachment B provides a list of the anticipated design drawings.
5. No geotechnical or surveying services will be required for the completion of design phase activities. Existing site plan and survey information previously compiled for the design of the East Area CSO and Intrenchment Creek WRC Phase 1 Improvements and South River WRC Improvements will be used as the basis of design. The General Contractor will be instructed to drill test pits and provide utility location services as part of the construction contract.
6. No new roadway work is required. Where pipes cross existing paved areas, these areas will be patched rather than resurfaced.
7. Sedimentation and Erosion control drawings will be provided as part of the scope of work.
8. No new buildings will be required. Other than potential modifications to be identified at the South River Chemical Building, no modification to existing buildings will be required to bring them into compliance with current NFPA or building code requirements. Design costs to complete recommended modifications to the South River Chemical Building have not been included in this proposal.
9. Existing vegetation will be maintained on site.
10. Significant modifications to the existing electrical service will not be required to accommodate the rehabilitation to the six secondary clarifiers and modification of the secondary clarifier scum pits or upgrade of the grit removal system at the Intrenchment Creek headworks.
11. An NPDES construction stormwater discharge permit will not be required for this project.
12. Modifications to the chemical building upgrade and Intrenchment Creek force main repair documents recommended as a result of the CH2M HILL quality assurance review will be incorporated into the documents by the City of Atlanta. (not CH2M HILL).

13. Approximately 70% complete drawings and specifications have been prepared for the chemical building upgrade package have been prepared by the City of Atlanta. These will be inserted into the Contract Documents at their current level of completion. No additional work to bring these drawings to 100% will be undertaken by CH2M HILL.
14. No modifications to existing heaters at any buildings at South River will be required as a result of the upgrade of the natural gas distribution system. No code related building modifications will be required as result of the upgrade of the natural gas distribution system at South River.
15. Twelve review copies and five final copies of the Technical Memoranda will be provided to the City. Fifteen copies of the Contract Documents will be provided to the City for their review.
16. CH2M HILL will perform an Operability Review of the 85% Contract Document submittal. This reviewer will participate in the 85% design review meeting with the City staff.

#### **Prequalification of Bidders Assumptions**

1. A single prequalification package will be developed. This single package may be used to prequalify bidders for both this project and an upcoming project at the R.M. Clayton WRC.

#### **Bid Phase Assumptions**

1. Printing of contract documents will be done by the CH2M HILL. The City Plan room will distribute bid documents.
2. The project will be bid as a single, general construction contract.
3. Addenda will be issued by the City of Atlanta Department of Purchasing and Real Estate. A maximum of two technical addenda will be produced by CH2M HILL. Additional addenda may be issued by the Department of Purchasing and Real Estate.
4. All bids and supporting documentation will be evaluated. CH2M HILL will prepare a letter documenting the results of this evaluation and recommendation for award of the construction contract.
5. The construction contract will be bid only once. If for any reason not attributable to the designer, bids are not awarded, additional bid phase services will require an amendment to this draft scope of work.
6. CH2M HILL will prepare three sets of conformed contract documents for execution by the City and Contractor.
7. CH2M HILL will furnish twenty- five written copies and five electronic copies of the conformed Contract Documents to the City. Each of the five individual CDs will contain both the specifications and the drawings. Specifications will be furnished in Microsoft Word format, latest version. Drawings will be furnished in PDF file format.

#### **Construction Phase Assumptions**

1. The construction period will last approximately eight months (one month mobilization/ demobilization, six months to substantial completion plus an additional month to final completion) and end prior to March 31, 2004.

2. CH2M HILL will arrange and conduct one pre-construction meeting with the City, Contractor and other interested parties in the City's office or at the project site.
3. CH2M HILL will participate in partnering activities with the City and the selected General Contractor. Three persons will attend up to 3 partnering meetings lasting a total of 6 days.
4. CH2M HILL will participate in Dispute Resolution Board (DRB) activities with the City and selected General Contractor if these become necessary. Three persons will attend up to 3 DRB meetings lasting a total of 3 days.
5. Expenses totaling \$2,200.00 have been allotted for the purchase of the video camera and accessories. Expenses totaling \$8,000.00 have been allotted for the purchase of the photocopier and 2-year maintenance contract.
6. A total of 60 days of Expedition support will be provided to the project.
7. Bi-weekly construction progress meetings will be attended at the project site. CH2M HILL will have one person attend each meeting.
8. CH2M HILL will provide one full time and one part time Resident Engineer (approximately 66 hours per week combined effort) for a period of 7 months. City staff assigned to the support the project will be the Construction/Project Manager, Project Engineer (who will provide insurance and change order processing support) and Project Clerk.
9. 25 original submittals and 10 re-submittals will be reviewed. This includes shop drawings, O&M submittals and samples.
10. Six construction schedules and updates will be reviewed. CH2M HILL will review seven monthly pay requests from the Contractor.
11. Periodic field and specialty inspection trips totaling seven days will be made by design engineers.
12. CH2M HILL will conduct one final inspection lasting 2 days including travel time.
13. CH2M HILL will provide no surveying services during construction.
14. Any labor and expenses required to address construction claims, unforeseen subsurface considerations or additional construction requested by the Contractor or City are additions to this scope of work.
15. Any claims resolution or litigation assistance requested of CH2M HILL will constitute additional services.

#### **Post - Construction Phase Assumptions**

1. CH2M HILL will develop Operations and Maintenance (O&M) Manual revisions addressing the modified facilities and systems. The revisions will be computer based. Five copies of the O&M Manual will be submitted on CD for Owner review. Five written copies as well as five copies of the final electronic version on CD will be submitted.
2. CH2M HILL will include Maximo data sheets as part of the Contract Documents so that the Contractor and equipment vendor will initially complete the required information. CH2M HILL will verify the accuracy of the information provided by the Contractor and coordinate with the Contractor and equipment supplier to complete any missing information.

3. CH2M HILL will provide a total of 15 -days of start-up assistance and training.
4. CH2M HILL will prepare 48 record drawings based on mark-ups from the Contractor. Five electronic copies of the drawing files on CD in both AutoCAD and as PDF files formats along with ten -11" x17" copies of the drawings will be provided.
5. CH2M HILL will furnish five copies of the SOPs on CD to the City in Microsoft Word format, latest version.
6. CH2M HILL will coordinate the resolution of equipment malfunction problems between the City of Atlanta WRC staff and the General Contractor during the one year warranty period. A total of 20 days of assistance will be provided (approximately 3 hours/week for 52 weeks). CH2M HILL will also conduct one warranty inspection lasting 4 days including travel time within one year of facility startup. CH2M HILL will prepare a report summarizing the findings of the warranty inspection.

### Schedule

CH2M HILL proposes to complete scoped services as presented herein as follows:

	Start	Finish
Preliminary Design, Final Design and Permitting	September 2002	January 2003
Contractor Prequalification	October 2002	December 2002
Bid Phase Services	February 2003	May 2003
Construction Phase Services	June 2003	January 2004
Post Construction Phase Services	February 2004	January 2005

### Compensation

The City will compensate CH2M HILL for the scope of services presented herein on a per diem basis with a not to exceed cost of \$863,800.00. Work will be performed in accordance with the terms and conditions of the agreement between the City of Atlanta and CH2M HILL/TOC, Inc. - a Joint Venture executed March 30, 1998 (FC-6710-96). A summary of the basis of this cost is follows.

Phase 1 - Preliminary and Final Design, Permitting	\$261,500
Phase 2 - Prequalification of Bidders	\$31,600
Phase 3 - Bid Phase Services	-\$55,500
Phase 4 - Construction Phase Services	\$455,900
Phase 5 - Post Construction Phase Services	\$69,300
Total	\$863,800

Mr. David Winters  
Page 10  
September 24, 2002

A breakdown of labor and expenses is attached. Compensation rates for work executed between April 1, 2001 and March 31, 2002 have already been negotiated. Additional compensation rates will be developed and negotiated under this Task Order for construction and post-construction phase activities executed between April 1, 2002 and January 2005.

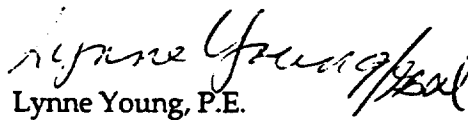
Thank you for the opportunity to submit this proposal for engineering services. Do not hesitate to call with questions or to request additional information.

Sincerely,

CH2M HILL



Richard A. Hirsekorn  
Vice President



Lynne Young, P.E.  
Project Manager

revised RFP ver6.doc

cc: Russ McKern/City of Atlanta  
Gerri Dickerson/CH2M HILL  
Chuck Crandall/CH2M HILL

# Attachment A

## East Area 2003 Upgrades -- Index to Drawings

### General

- G-1 Cover
  - G-2 Index to Drawings
  - G-3 Abbreviations
  - G-4 General, & Civil Legend
  - G-5 Structural Legend
  - G-6 Mechanical Legend
  - G-7 Electrical Legend
  - G-8 Instrumentation and Control Legend
- South River

### Demolition

- 1-D-1 Secondary Clarifier Demolition Plan
- 1-D-2 Scum System Demolition Plan

### Civil

- 1-C-1 Overall Site Plan
- 1-C-2 Erosion Sedimentation/Site Plan
- 1-C-3 Erosion Sedimentation/Site Plan
- 1-C-4 Erosion Sedimentation/Site Plan
- 1-C-5 Erosion Sedimentation/Site Plan
- 1-C-9 Site Details, Tie-Ins

### Mechanical

- 1-M-1 Secondary Clarifier Plan (Typical)
- 1-M-2 Secondary Clarifier Sections & Details
- 1-M-3 Secondary Scum Pumps, Plan, Sections, & Details

### Yard/Site Piping

- 1-Y-1 Yard Piping Plan - Sector A
- 1-Y-2 Yard Piping Plan - Sector B
- 1-Y-3 Yard Piping Plan - Sector C
- 1-Y-4 Yard Piping Plan - Sector D
- 1-Y-5 Yard Piping Details

### Electrical

- 1-E-1 Electrical Site Plan
- 1-E-2 MCC One Line Diagram

### Instrumentation and Controls

- I-1 P&ID - Secondary Clarification/Scum Pumping
- I-3 Block Diagram

### Intrenchment Creek

### Demolition

- 2-D-1 Grit Removal System Demolition

### Civil

- 2-C-1 Overall Site Plan
- 2-C-2 Erosion Sedimentation/Site Plan
- 2-C-3 Erosion Sedimentation/Site Plan
- 2-C-4 Site Details, Tie-Ins



**Structural**

2-S-1 Grit Removal Equipment Platform Plan Section and Details

2-S-2 Passive Overflow Splitter Box Plan and Details

**Mechanical**

2-M-4 Grit Removal Equipment Plan Section and Details

**Yard/Site Piping**

2-Y-1 Yard Piping Sector A

2-Y-2 Yard Piping Sector B

2-Y-3 Effluent Pump Station Overflow Piping Enlarged Yard Piping  
Plan

2-Y-4 Yard Piping Details

**Electrical**

2-E-1 MCC One Line Diagram

2-E-2 Grit Removal Equipment Process Plan

**Instrumentation and Controls**

2-I-1 P&ID - Grit Removal

2-I-2 Block Diagram

**Standard Details**

D-1 Erosion Sediment Control Details

D-2 Structural Standard Details

D-3 Mechanical Standard Details

D-4 Yard Piping Standard Details

D-5 Electrical Standard Details

D-6 Wire & Conduit Schedules

D-7 I&C Standard Details

## **Proposal for Services**

### **2003 East Area Upgrades**

#### **Part I      General**

A proposal is requested from CH2M Hill for providing design, bid services, prequalification services, construction services and start-up/warranty services for the 2003 improvements to the South River WRC and Intrenchment Creek WRC. Bid package will be for a design-bid-build project.

The South River WRC is a wastewater treatment facility located at 2640 Jonesboro Rd., SE, Atlanta, GA. Four items at this location to be included in the bid package are the rehabilitation of the secondary clarifiers, upgrading the secondary clarifier scum system, upgrading the chemical feed building and upgrading the facility's natural gas supply. The City has already prepared design documents for the upgrade to the chemical feed building. These documents are to be included in the final design package.

The Intrenchment Creek WRC is a wastewater treatment facility located at 1510 Key Road, SE, Atlanta, GA. Three items at this location to be included in the bid package are the upgrading of the grit removal system, the installation of a passive bypass from the effluent pump station to the Intrenchment Creek tunnel and repair of a section of the Intrenchment Creek force main.

#### **Part II      Scope of Services**

##### **A.      Evaluation:**

1. Visit and thoroughly inspect each Project Site and any structures or other manmade features to be modified without interruption to the operation of the facility.
2. Investigate the locations of all existing buildings, utilities, conditions, streets, equipment, components and other attributes having or likely to have an impact on the Project.
3. Review and analyze all Project geotechnical, structural, chemical, electrical, mechanical and construction materials, test, investigations and recommendations.
4. Investigate, review and analyze local zoning restrictions and requirements.
5. Gather any other information necessary for a thorough understanding of the Project including review of any existing as-built drawings of the facility and equipment.
6. Meet with the City's Construction Management Group to determine bid schedule, required allowances and other special preliminary requirements.
7. Prepare 12 copies of a technical memorandum that summarizes the findings from the evaluation phase.
8. Organize and hold a kick-off meeting at the start of the project.
9. Coordinate shutdown and evaluation of equipment with plant management.

**B. Design**

1. Prepare specifications, plans and supplemental bid information.
2. Prepare reports required for design including Design Development Report, Hydrology Study, Geotechnical report and other documents required to obtain approval of the design.
3. Provide to the City design drawings including, but not limited to plans, elevations and cross-sections, as well as alternative design recommendations and proposals.
4. Prepare review package and conduct design review meetings at approximately 30% and 85% completion of design.
  - a. Five copies of the Contract Documents and twelve copies of the Technical Memoranda will be provided for review.
  - b. Five copies of the final Technical Memoranda will be provided to the City.
5. Prepare City, County and EPD code review sets as required to maintain project schedule. Respond to all received questions and update as required.
6. Regularly meet with the City to discuss and review the design.
7. Upon completion of the design drawings, prepare and submit to the City an estimate of Total Project Cost broken down by line item into major construction disciplines and systems.
8. Revise the drawings and cost estimates as requested by the City
9. Provide 60 days of expedition support to the City.

**C. Bid Phase**

1. Prepare a Prebid package that includes the following:
  - a. Scope of work
  - b. Coordination of work
  - c. Specific work required
  - d. Bidder qualifications and submittals
    - (1) Submittals
    - (2) Cost estimates
    - (3) Project Schedule (Primavera P3 Format Required)
    - (4) Unit pricing and fees
  - e. Instructions to bidders, including proposal evaluation and selection criteria
  - f. Proposal Forms
  - g. Agreement Forms
  - h. Bond Forms
  - i. Schematic Site Plan, Floor plans and design drawings
  - j. Space Standards, Environmental Requirements and any other permit requirements
  - k. Specifications for Work given in Scope
  - l. Submittals required from the Contractor
  - m. Execution of work
2. Provide two technical Addenda to the bid package.
3. Provide materials to assist in proposal selection.
4. Attend the prebid meeting, site visit, and bid opening.

5. Evaluate all bids received and provide the City with a written recommendation of award.

**D. Prequalification Phase**

1. Prepare a prequalification package for potential bidders that shall include:
  - a. Organization structure and description
  - b. Quality Assurance Program
  - c. Safety Program
  - d. Contractor's Financial Report
  - e. List of references
  - f. List of recent work completed
  - g. Other information
2. Distribute the prequalification packages to potential bidders.
3. Bidders shall return completed prequalification packages to the Consultant.
4. Evaluate and investigate the prequalification packages and make a recommendation to the City of potential bidders.
5. All prequalification information gathered by the Consultant shall be submitted to the City with their recommendation so that the City may review and make a final decision on qualified bidders.

**E. Construction Phase services:**

1. Arrange and conduct one pre-construction meeting with the City and the Contractor.
2. Attend bi-weekly construction progress meetings at the project site.
3. Furnish information available to assist in obtaining any required permits for completion of this project.
  - a. Three signed and sealed sets of contract documents (including 11"X17" drawings) shall be provided for permitting.
4. Furnish the following documents to the City:
  - a. Twenty-five sets of printed conformed contract documents to the City.
  - b. Five individual CDs of the conformed contract documents in electronic format to the City containing specifications and drawings. Specifications shall be in MS Word and Drawings in PDF format.
  - c. Three sets of conformed contract documents for execution.

**F. Post Construction Phase services:**

1. Provide training prior to startup of equipment. Separate training classes shall be held for South River WRC and Intrenchment Creek WRC.
2. Update the existing electronic O&M manuals with any changes needed.
3. Collect and review Maximo data sheets provided by the Contractor for accuracy of information and obtain any missing information. Transmit completed data sheets to the City's Project Manager.
4. Provide assistance to the City with warranty items for one year following completion of construction. Conduct a warranty inspection within one year of the final completion.
5. Provide the following documents after construction is completed:

- a. Five individual CDs of the record drawings in electronic format to the City containing drawings in both PDF format and AutoCAD LT.
- b. Ten copies of the record drawings printed on 11'x17" sheets.
- c. Five copies of the SOPs electronically on five individual CDs to the City written in MS Word.
- d. Five electronic copies of O&M manual updates shall be submitted on individual CDs along with five copies of the O&M updates printed on 8-1/2"x11" paper.

## **Part II      Scope of Work:**

### **A.      Rehabilitation of six secondary clarifiers:**

- 1.      The specifications for the existing clarifiers are as follows:
  - a.      The existing clarifiers were manufactured by Envirex and were installed approximately 1980. Each clarifier is a circular concrete tank with an inside diameter of 140 ft 0 in, a floor slope of 1/2 in/ft, and a sidewater depth of approximately 15 ft 4 in.
  - b.      The collector is the under-floor, center-column feed and concentric weir overflow type with a central drive mechanism which supports and rotates two attached take arm assemblies complete with sludge removal draw-off uptake pipes and the rotary section of the sludge collecting box. A combination of scraper and deflector blades attached to the bottom of the rake arms move activated sludge to the opening of the uptake pipes or central sludge pocket.
  - c.      Each clarifier has an energy dissipating type influent feed well and baffle arrangement.
  - d.      The rapid sludge removal draw-off pipes for each collector are designed for an activated sludge withdrawal rate ranging from a minimum of 900 gpm to a maximum of 7050 gpm per tank.
  - e.      Each collector shall have two scum skimming devices supported from the top of both of the rake arms to move the floating to outlet boxes and pipes located as shown on the attached drawing.
  - f.      The collector and drive units are designed to operate at a peripheral speed of approximately 10 feet per minute on either a continuous or intermittent basis.
- 2.      No more than one clarifier may be taken off line at a time for rehabilitation.
- 3.      One clarifier will be taken off line for inspection.
  - a.      The off line clarifier will be inspected by CH2M Hill and City Personnel to determine what is needed to rehabilitate the clarifier.
  - b.      The requirements for rehabilitating the remaining five clarifiers will be based on the findings from the inspection of the one clarifier taken off line and from review of plant maintenance records on the other clarifiers.
  - c.      The City needs two weeks advanced notice for scheduling a clarifier down for inspection.

### **B.      Modification of secondary clarifier scum pits and associated piping.**

1. The objective is to modify and repair the existing scum pits to an operational status.
  2. Two clarifiers share a common scum pit. Each clarifier also has a second scum pit that is used only for that clarifier.
  3. The conceptual design for the scum pit includes the following:
    - a. Use the common scum pit found between each pair of clarifiers for the scum removal.
    - b. Remove all piping, wiring, and other equipment from the pit
    - c. Coat the pit with a coating suitable for the service.
    - d. Install new wiring, piping and an upright sump pump in each pit.
    - e. Install controls and associated equipment for operation of the pumps.
    - f. Install a water spray system in the scum pits.
    - g. Install transfer piping for transferring scum to a disposal point.
  4. The Consultant shall review drawings of the clarifier scum pits and the plant and develop alternatives for handling scum. The alternatives shall be provided to the City as Technical Memorandums with the recommended alternative specified
  5. Collected scum shall be transferred to the digesters from the scum pits.
- C. Upgrade of Chemical Building that includes the following:
1. The objective is to remove obsolete equipment and install a second pump and new transfer piping for adding Ferric Chloride to the inlet and outlet of the aeration basins.
  2. The scope of this project is included in Appendix A for review.
  3. A QA/QC review the existing layout, design drawings and specifications for Upgrade of the Chemical Building. Analyze the layout and specifications and make recommendations on improvements to the design. Incorporate specifications into general specifications for the entire project.
  4. Following review by the City on recommendations to the design, include the updated design in the final bid package. The City will perform any updates for this item and stamp final documents.
- D. Upgrade of the South River WRC's natural gas supply:
1. One objective is to evaluate the natural gas piping that enters the plant from Jonesboro Road. Design and install natural gas distribution piping, pressure regulating valves, shutoff valves, gas meter, safety devices and other items required to allow the gas distribution system from Jonesboro Road to be a complete operational system. Install gas service in the primary odor control buildings.
  2. A second objective is to evaluate the natural gas piping that to the dewatering odor control building. Gas is supplied to this building from piping entering the plant from South River Industrial Boulevard. Determine why this system is not operational and design and install components necessary for a complete operational system.
  3. Coordinate natural gas service requirements with the local gas company for proper meter selection and installation.
  4. Provide startup services for equipment operated with natural gas following installation and upgrades of the natural gas systems.

- E. Upgrade grit removal at Intrinchment Creek WRC headworks:
1. The objective is to design and install equipment for grit removal and other associated equipment required to remove grit from the Intrinchment Creek WRC influent.
  2. The Consultant shall review drawings of the existing grit removal system and provide the city with Technical Memorandums for alternatives available for grit removal. The Consultant will make a recommendation on the best method.
- F. Installation of an overflow pipe from the effluent pump station to the Intrinchment Creek tunnel:
1. The objective is to design and install a passive overflow from the effluent pump station to the Intrinchment Creek Tunnel. The purpose of this overflow is to allow water from the effluent pumping station to flow into the tunnel in the event of a failure of the effluent pumping station.
  2. The Consultant shall review drawings of the plant and determine the best route for the overflow pipe from the effluent pump station to the tunnel. The design shall allow water to gravity flow from the effluent pump station overflow to the Intrinchment Creek tunnel.
  3. Based on the determined route, an abandoned 48" reinforced concrete pipe will be cut and plugged if the route crosses this pipe.
  4. The Consultant shall size the passive overflow to accommodate the peak hourly effluent flow of the plant.
- G. Intrinchment Creek Force Main repair:
1. The objective is to repair a section of a 36" prestressed concrete pipe force main that runs from the Intrinchment Creek WRC to the South River WRC.
  2. A temporary repair on the force main will be removed and a permanent repair made.
  3. Bypass pumping may be required to maintain service of the force main during the repair. The passive overflow from the Intrinchment Creek pump station to the Intrinchment Creek tunnel will also require completion before this repair is started.
  4. The consultant shall conduct a QA/QC review the existing layout and conceptual design drawings and specifications for Intrinchment Creek force main repair. Analyze the layout and specifications and issue Technical memorandums on improvements to the design.
  5. Following review by the City on recommendations to the design, include the updated design in the final bid package. The City will perform any updates for this item and stamp final documents.
- H. Additional Contractor requirements:
1. Providing equipment data on City supplied CMMS forms. The City will input information into the Maximo maintenance management database.
  2. Provide spare parts and tools for equipment installed or upgraded.
  3. The Contractor shall utilize Primavera Expedition, Version 8, for documentation of the project and meetings with the City. All as-built

drawings generated with the project shall be submitted to the City in both electronic format (AutoCAD LT 2000 on CD) and hardcopy. The Contractor shall take digital photographs of work in progress to document work at the start of the project, and once per week until complete.

4. The Contractor shall coordinate all activities with Plant Management so as not to interrupt normal facility operations.
5. Assume approximately 10% allowance in the construction contract for additional work.

### **Part III**

#### **Execution**

- A. The City will provide the Consultant with the name of a facility contact with phone number. The Consultant shall arrange site visits to the facility through the facility contact person.
- B. Site visits shall be conducted to gather information for developing the design. This review will consist of review of drawings, inspection of site, and verification of information and meetings with the Facility Manager, Maintenance Manager and others. Drawings for the design will be generated or updated for the facility.
- C. **Schedule**
  1. This project is in response to a prior EPD inspection. Work needs to be completed as soon as possible (ASAP).
  2. Allow two weeks for City review of deliverables required during preparation of this bid package.
- D. **Billing**
  1. Bill this task on a separate monthly invoice for services provided from the first of the month through the last day of the month. Itemize each service provided on the invoice.
  2. Each bill shall include a form called "Periodic Estimate for Partial Payment" that will list the total Contract Amount, each contract task amount, and amount charged to this task.
  3. Invoices are to be sent to the City for approval.
  4. Invoices shall be broken down into services provided. Include labor hours for the service, unit prices approved in the contract and total cost.
  5. Backup on all direct expenses shall be provided and attached to the invoice.



## Appendix A

### 1.01 Scope for Upgrade of Chemical Feed Facility

The Work consists of, but is not limited to, improvements to the South River WRC Chemical Feed Building (used for chemical feed equipment) and associated areas as summarized below:

**A. Polymer Equipment:**

**1. Demolition:**

- a. Removal of polymer tanks, piping and control panels.
- b. Terminate above ground polymer piping to a depth at least 8 inches below the surface of the ground and place a cap on the end of the pipe remaining in the ground.

**B. Caustic Feed Equipment:**

**1. Demolition:**

- a. Removal of four caustic pumps, piping, control panels, pipe stands and associated materials.
- b. Piping shall be removed from the valve on the outlet of each storage tank to the process discharge points. Buried piping shall be left in place but removed to a depth of at least 8 inches below the surface of the ground.
- c. Remove tank heater controls and associated wiring.
- d. Prior to removing any equipment or piping, caustic feed equipment and piping shall be rinsed with water to remove any caustic remaining in the system. Piping shall be rinsed with water until the rinse water has a pH between 7 and 9.

**C. Ferric Chloride ( $\text{FeCl}_3$ ) feed equipment:**

**1. Demolition:**

- a. Removal of four  $\text{FeCl}_3$  pumps, piping, and control panels (except the new pump installed). Terminate above ground piping to a depth at least 8 inches below the surface of the ground and place a cap on the end of the pipe remaining in the ground.
- b. Piping shall be removed from the valve on the outlet of each storage tank to its discharge points.
- c. Rinse  $\text{FeCl}_3$  feed equipment and piping to remove any  $\text{FeCl}_3$  in the system.

**2. Supply and install:**

- a. Supply and install one metering pump for  $\text{FeCl}_3$ .
- b. Provide a temporary system for feeding  $\text{FeCl}_3$  to the process during the installation and startup of items listed in these specifications.
- c. Clean and paint pump mounting stands for the new pump and the existing pump.
- d. Install new wiring and conduit for the existing Encore 700  $\text{FeCl}_3$  pump.
- e. Supply and install piping, valves, and instrumentation for transferring  $\text{FeCl}_3$  from the storage tanks to the influent and effluent of the aeration basins as shown in the drawings. Buried double containment piping shall

be used for transfer from the chemical building to the aeration basin influent and effluent as shown on the attached drawings.

- f. Install supports for piping required by manufacturer specifications or if needed to prevent damage from movement of the pipe.
- g. Supply and install two sumps and associated equipment connected to the double containment piping as shown on the drawings. Each sump shall be equipped with a 120V float switch activated sump pump and a conductivity switch. The conductivity switch shall be used for leak detection and connected to an alarm in Panel FCP.
- h. Supply and install a field control panel (FCP) containing the speed controls for the metering pumps, switches, and leak detection indicator. Panel power to be supplied from spare circuits from existing lighting panel L11.
- i. Supply GPS coordinates for piping route.
- j. Testing installed system and repairing any problems found during testing.

**D. Water Piping:**

- 1. Demolition:
  - a. Removal of Plant and Potable water piping in the Chemical Feed Building to the Potable Water Valve and Plant Water Valve.
  - b. Remove the existing safety shower and eyewash elements inside of the chemical feed building.
- 2. Supply and install:
  - a. Plant and Potable water piping and associated equipment as specified.
  - b. Supply and install a new safety shower/eyewash unit meeting the requirements of ANSI Z358.1 and 29CFR1910.151.

**E. Bulk Storage Tanks:**

- 1. Demolition:
  - a. Cut up and dispose of a horizontal insulated steel tank (10'5" diameter x 31'0" long) steel support saddles, tank insulation, tank fittings and other items associated with the tank.
  - b. Remove the level sensors from the two Caustic Storage tanks. Remove the piping from the tank outlet valve to the Chemical Feed building.
  - c. Empty, rinse and dispose of two caustic storage tanks, including insulation and all attached fittings.
- 2. Supply and install:
  - a. Install level indication, conduit, and wiring for two  $\text{FeCl}_3$  bulk storage tanks to panel LT-3200.
  - b. Relocate panel LT-3200 by  $\text{FeCl}_3$  Bulk Storage tank #1. Install power wiring to the panel from panel L-11. Install a light, fan, and heater in the existing panel LT-3200.
  - c. Inspect and test the existing  $\text{FeCl}_3$  tank that is not in use (shown as Ferric Chloride Tank #2 on the drawings). Provide a technical inspection report and Professional Engineer's certification if the tank acceptable for use for this service.
  - d. Install two bulkhead fittings and float switches in the two  $\text{FeCl}_3$  bulk storage tanks, wiring, and lights for a high tank high level alarm.

